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**REMARKS**

The undersigned attorney thanks Examiner Wimer for his careful review of this patent application. Prior to entry of this amendment, claims 1 - 34 were pending in the application. Claims 1, 5, 6, 7, 16, 18, 22, 24, have been amended. Claims 30 - 34 have been cancelled. Upon entry of this amendment, claims 1 - 29 will be pending.

**Claims 1 - 3, 5, 6, 13, 15, and 22 - 24 Are Not Anticipated By The Applicant's Prior Antenna Mount**

In paragraph 2, the Office Action rejected claims 1 - 3, 5, 6, 13, 15, and 22 - 24 under 35 U.S.C. § 102(b) based upon a public use or sale of the invention. The Office Action alleged that the antenna mast provided with the Applicant's Declaration contained a central post and a plurality of stiffening vanes extending generally radially outwardly from the central post. The Office Action further alleged that the vanes are shown secured to the post via a triangular bracket with bolts for securing panel antennas and each plate has supporting vanes attached to the surface of the respective plate via a short leg and to the post with a longer leg via the triangular bracket. The rejection is traversed.

The figure of the antenna tower module submitted with the Declaration includes a bottom plate for mounting the antenna tower module to a mast or another module, a top plate and a beam extending between the bottom plate and the top plate. The antenna tower module also includes several stiffening vanes in the shape of L-brackets that have a short leg attached to the bottom plate and a long leg attached to and extending partially up the beam.

The invention of amended Claim 1, describes an antenna tower module for mounting to an antenna mast and supporting one or more antennas. The antenna tower module includes a bottom plate for mounting the module to the mast or to another module, a top plate and a multi-vane beam extending between the bottom plate and the top plate. The multi-vane beam is made up of a central post and a number of stiffening vanes that extend radially outward from the central post. Each of the stiffening vanes extend from the bottom plate to the top plate and are made up of a number of web portions.

To anticipate a claim, the reference must teach each and every element of the claim. MPEP § 2131. Although the antenna tower module provided with the Declaration illustrates several stiffening vanes, the antenna tower module does not describe, teach, or suggest that the

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vanes extend from the bottom plate to the top plate. Additionally, the antenna tower module provided with the Declaration does not describe, teach or suggest that the vanes are made up of a plurality of web portions. Because the antenna tower module provided with the Declaration does not teach, describe, or suggest each and every element of amended claim 1, the antenna tower module of amended claim 1 cannot be anticipated based on a public use or sale of the invention provided with the Declaration. Therefore, it is respectfully submitted that amended claim 1, and all claims that depend there from, are patentable over the cited reference and it is requested that the rejection be withdrawn.

The foregoing argument is equally applicable to independent Claims 16, 22, and 24 and all claims that depend respectively there from. Therefore, it is respectfully submitted that Claims 16, 22, 24 and all claims that depend there from are patentable over the cited reference and it is requested that the rejection be withdrawn.

#### **Claim 4 Is Not Obvious In View Of The Cited References**

In paragraph 4, the Office Action rejected Claim 4 under 35 U.S.C. 103(a) as being unpatentable over the figure attached to the Declaration of Prior Art in view of U.S. Patent No. 3,681,770 to Alford (hereinafter "*Alford*"). The Office Action alleged that *Alford* illustrates different geometries for the central post. The Office Action further alleged that it would have been obvious to employ a rectangular support post.

*Alford* describes a conducting shelf situated between adjacent levels of dipoles fed in the same or nearly the same phase that are attached to a mast. The shelf is dimensioned to reduce the coupling between dipoles while adding partial images which tend to cancel the remaining coupling between adjacent dipoles. *Alford* further discloses that the mast be have either a square, a triangular, or a circular cross section.

Although *Alford* discloses that the mast may be have a number of different geometrical cross sections, *Alford* fails to describe teach or suggest that the mast include a top plate , a bottom plate, or a number stiffening vanes that extended between the top plar and the bottom plate. Therefore, since *Alford*, either individually, or in combination with the primary reference fails to describe, teach, or suggest each and every element of the claimed invention, Claim4 is patentable over the prior art and it is respectfully requested that the rejection be withdrawn.

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**Claims 7 – 11 and 14 Are Not Obvious In View Of The Cited References**

In paragraph 5, the Office Action rejected claim 7 – 11 and 14 as being unpatentable over Applicants' figure in the Declaration of Prior Art. Since claims 7 – 11 and 14 depend upon independent claim 1, which is now patentable over the cited references, it is respectfully submitted that claims 7 – 11 and 14 are also patentable over the cited reference and it is requested that the rejection be withdrawn.

**Claims 12, 16, 17, 19 – 21, and 26 - 28 Are Not Obvious In View Of The Cited References**

In paragraph 6, the Office Action rejected claims 12, 16, 17, 19 – 21, and 26 - 28 as being unpatentable over Applicants' figure in the Declaration of Prior Art in view of U.S. Patent No. 5,966,102 to Runyon (hereinafter "*Runyon*"). The Office Action alleged that *Runyon* described providing a radome covering an antenna array for environmental protection and mounting the antenna arrays 120 degrees apart to provide 360 degrees of coverage (FIG. 5). The Office Action then alleged that it would have been obvious to one skilled in the art to have found it obvious to provide three panel arrays illustrated by *Runyon* in the invention disclosed by the figure provided with the Declaration to the Prior Art. The rejection is traversed.

*Runyon* describes a planar antenna array having radiating elements characterized by dual simultaneous polarization states and rotationally symmetric radiation patterns. The antenna contains radiating elements, a ground plane, a beam-forming network and a polarization control unit. The radiating elements, which exhibit dual polarization states are typically wave generators aligned in a linear array and positioned at a predetermined distance above a conductive surface of the ground plane. The radiating element and the ground plane operate in tandem to produce the desired beam pattern characteristics. Figure 5 of *Runyon*, which was cited by the Office Action, is an illustration of a typical installation of the antenna for operation in a PCS system. In particular, the antenna shown in Figure 5 is configured for a tri-sectored cell configuration having three antennas mounted to a mounting pole and centered at the base station, with each of the antennas providing 120 degrees of coverage in azimuth.

The invention of amended claim 16 describes an antenna tower having a mast with at least one antenna tower module mounted to the antenna mast for supporting one or more antennas. The antenna tower module includes a bottom plate for mounting the antenna tower module to the mast or to another module, a top plate spaced apart from the bottom plate, and a

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multi-gusseted beam extending between the bottom plate and the top plate. The multi-gusseted beam contains a central post and a number of stiffening gussets that each extend outward in a radial direction from the central post; and extend between the top plate and the bottom plate.

Each and every element of the claimed invention, and well as a motivation or suggestion to combine the elements, must be found in the references to establish a *prima facie* case of obviousness. MPEP §2142. Neither the figure in the Declaration of Prior Art or *Runyon* describes, teach, nor suggest an antenna mast having several stiffening gussets that extend both radially outward from the central post and also between the top plate and the bottom plate. Although the figure of the antenna mast module in the Declaration of Prior Art illustrates several stiffening vanes, the vanes extend only partially up the central beam and provide minimal support. *Runyon* merely describes attaching the antenna arrays directly to the mast and fails to even mention the use of an antenna mast module, let alone using stiffening vanes.

The invention of amended claim 16 on the other hand, utilizes stiffening gussets, which extend between the lower plate and the upper plate of the antenna mast module. In other words, the stiffening gussets extend the entire length of the beam and are attached to the bottom plate and the lower plate for added strength. The use of stiffening vanes that extend between the top plate and the bottom plate are simply not considered by either the primary reference or *Runyon*.

Furthermore, even if one were to combine the invention shown in the figure in the Declaration of Prior Art with *Runyon*, the resulting invention would not be the invention of amended Claim 16. Rather the resulting invention would be an antenna tower having a mast with at least one antenna tower module mounted to the antenna mast with a beam extending between the bottom plate and the top plate and several L-brackets that have a short leg attached to the bottom plate and extending partially up the beam. The antenna tower would also include three antennas attached to the beam, each of which would provide 120 degree beam coverage in azimuth. The resulting invention would lack the stiffening gussets that extend between the top plate and the bottom plate, as required by the invention of Claim 16.

The antenna tower module of Claim 16 provides several advantages over the prior art references. First, by having the stiffening gussets extend between the upper plate and the lower plate, the compression loads that the antenna mast module can sustain is significantly increased. The increased compression load allows three or more antenna mast modules to be stacked on top of one another, rather than just two modules, as allowed by conventional antenna mast modules

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of the prior art. Secondly, since the stiffening vanes extend the length of the beam, one part of the beam will be placed in compression while another part of the structure is placed in tension, which allows for larger and heavier antennas, such as high-gain antennas, to be attached to the antenna mast module. Finally, because of the increased resistance to compression loads, the antenna mast module of claim 16 is suitable for use in high-wind environments.

Because none of the references describe, teach, or suggest an antenna tower mast having several stiffening gussets that each extend radially outward from the central post and also extend between the top plate and the bottom plate, it is respectfully submitted that Claim 16 is patentable over the cited references and it is requested that the rejection of Claim 16 be withdrawn.

The foregoing argument applies to dependent Claims 12, 17, 19 – 21, and 26 - 28, which it is respectfully submitted, are also patentable over the cited references. It is therefore requested that the rejection of these claims also be withdrawn.

**Claims 18, 25, 29 Are Not Rendered Obvious By The Prior Art References**

In paragraph 7, the Office Action rejected Claims 18, 25, 29 – 31, and 34 as being unpatentable over the figure attached to the Declaration of Prior Art in view of U.S. Patent No. 6,222,503 to Gietema et al. (hereinafter "*Gietema*") ( and in view of Runyon with respect to claims 18 and 34). The Office Action alleged that *Gietema* describes in FIG. 8B the use of T-shaped transversely extending flanges at the end of radially extending stiffening gussets and that the flanges are located at the periphery and provide stiffening. The Office Action further alleged that it would have been obvious to one skilled in the art to employ the flanges described by *Gietema* with the primary reference device.

With respect to Claim 18, which depends upon independent Claim 16, which is allowable over the cited references as discussed above, it is respectfully submitted that Claim 18 is also patentable over the cited references and it is requested that the rejection be withdrawn.

With respect to Claim 25, which depends upon independent Claim 24, which is allowable over the cited references as discussed above, it is respectfully submitted that Claim 25 is also patentable over the cited references and it is requested that the rejection be withdrawn.

With respect to Claim 29, the rejection is traversed. Amended Claim 29 describes an antenna tower support structure for mounting to an antenna mast and for supporting one or more

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antennas. The antenna tower support structure *consists of* a bottom member for mounting to the mast or to another module a top member spaced apart from the bottom member and a central post. The antenna tower support structure also includes a central post extending between the bottom member and the top member and a plurality of peripheral stiffening flanges spaced radially outwardly from the central post, which also extend between the bottom member and the top member.

*Gietema* discloses using transversely extending flanges at the end of radially extending stiffening gussets. The stiffening gussets provide support for the transversely extending flanges, which hold the antenna elements. The stiffening gussets therefore, may be considered an essential limitation to the invention of *Gietema*. The invention of Claim 29 *consists of* a central post connected between a top member and a bottom member and a plurality of peripheral stiffening flanges spaced radially outwardly from the central post. The invention of Claim 29, however, lacks the stiffening gussets, as required by *Gietema*. Therefore, because neither *Gietema* nor the primary reference describe, teach, or suggest an antenna tower mast using a plurality of stiffening flanges without the use of stiffening gussets, it is respectfully submitted that claim 29 is patentable over the cited references and it is requested that the rejection of claim 29 be withdrawn.

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**CONCLUSION**

It is respectfully submitted that claims 1 - 29 are in condition for allowance and that each point raised in the Official Action with regard to these claims has been fully addressed. Therefore, it is respectfully requested that the rejections to claims 1 - 29 be withdrawn and that claims 1 - 29 be processed to issuance in accordance with Patent Office Business.

If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any informalities that can be corrected by an Examiner's amendment, please contact John Briski at 404.885.3141.

Respectfully submitted,

By: John M. Briski  
Reg. No. 44,562

TROUTMAN SANDERS LLP  
Bank of America Plaza  
600 Peachtree Street, N.E.  
Suite 5200  
Atlanta, Georgia 30308-2216  
(404) 885-3141